



Ph.D. Biophysics day

May 7-8, 2024

Theorie Seminarraum SB3 3.170a
or Zoom

<https://gsi-fair.zoom.us/j/66043302069>

Presentations: 10 min + 5 min discussion

Agenda – Tuesday, May 7

13:15

Welcome

13:25

Laura Schwan: Base excision repair (BER) contributes to double strand break (DSB) clustering within heavy ion tracks

13:40

Leon Kaysan: From milli- to nanometer: employing modern microscopy methods for brain region specific organoids and assembloids

13:55

Kim Knorr: HippOs in Space: Human region-specific cerebral organoids as an organotypic 3D in-vitro model for neuroscience under earth and space conditions

14:10

Esther Schickel: Give me your hand: the interaction between tumor and normal tissue in human cerebral organoids

14:25 *Coffee break*

14:35

Amelia Jansen van Vuuren: The gut MICROBiome as a BIomarker for spAce radiation risk (MICROBIAN)

14:50

Melte Benje: The CANTO project: Radiation Effect on Circulating Cancer Cells and Metastasis Formation

15:05

Tamara Vitacchio: The BARB project: first application of radioactive ion beams in a preclinical setting

15:20

Martina Moglioni: AI-driven synthetic imaging and analytical methods for dose monitoring in adaptive charged particle therapy with in-beam PET data

15:35

Guangru Li: New particle therapy method to hypoxic tumor: LET boost by Particle Arc irradiation (LEOPARD)

15:50 *Coffee break*

16:00

Hong Ha Nguyen: Physical and Technical Experiments for FLASH irradiations with Carbon Ions

16:15

Warisara Charuchinda: Physical experiments and simulations for FLASH dosimetry and particle beam application

16:30

Virginia Boretti: Modeling the biological effects of mixed radiation fields: first steps towards space applications

16:45

Luca Lunati: Towards the GCR Simulator @GSI-FAIR: first experimental results and future perspectives

17:00 *Adjourn*

Agenda – Wednesday, May 8

9:30

Welcome

09:35

Cristina Totis: Potential molecular mechanisms of the enhanced immunogenicity of cancer cells exposed to carbon ions

09:50

Gaia Volpi: Complement system: a new role in combination with radiotherapy in tumor treatment

10:05

Christian Deglow: Model based prediction and quantification of tissue response to radiotherapy for lung cancer

10:20

Maria Chiara Martire: Should we treat thoracic patients in upright position?

10:35 Coffee break

10:50

Cosimo Galeone: Real-time 4D-dose calculation to assess the efficacy of motion mitigation strategies

11:05

Anastasiia Quarz: An AI dose engine for fast carbon ion treatment planning

11:20

Gianmarco Camazzola: Fast and accurate: probing the homogeneous biochemical stage of radiation damage with the new TRAX-CHEMxt code

11:35

Vladislav Sandul: Effects of radiotherapy on the immune system: clinical studies and mathematical modeling

11:50

Kim Sennhenn: Effectiveness of low-energetic ions – modeling various levels of inhomogeneity

12:05 End of the Ph.D. day